SCIENTIFIC SERIALS

Ocean Highways, March.—The following are the original articles in this number :—"Dr. Livingstone and the Cameron Relief Expedition;" "Francis Garnier—In Memoriam," a highly and deservedly eulogistic memoir (by Colonel Yule, C.B.) of this brave and high-minded soldier and explorer, whose untimely death we recently noticed; "Bhawalpur;" "An Account of the Early Jesuit Missions in the La Plata," by A. A. Geary; and "The British India Steam Navigation Company."

THE *Geological Magazine*, March.—The following are the original articles in this number:—"The Leinster Coal-field," by J. M'C. Meadows (with a page map); "On a new Species of *Dithyrocaris* from the Carboniferous Limestone, &c.," by Henry Woodward, F.R.S., and Robert Etheridge, jun. (with a plate); "Glacialoid or Rearranged Glacial Drift," by G. H. Kinahan; "On some new Devonian Fossils," by Prof. H. Alleyne Nicholson (with a woodcut and plate); "Reply to Mr. Poulett-Scrope," by Robert Mallet, F.R.S.

Quarterly Journal of the Meteorological Society, January.—This number contains the following papers :—"Notes on Meteorology of Vancouver Island," by R. H. Scott, F.R.S.; "The Thunderstorm at Brighton on October 8, 1873, and its effects," by F. E. Sawyer; "Some of the Considerations suggested by the Depressions which passed over the British Islands during September 1873," by F. Gaster; "On an improved form of Aneroid for determining Heights, with a means of adjusting the Altitude Scale for various Temperatures," by Rogers Field; "On the Hurricane of August 1873, which moved in a curved track round Bermuda between the 20th and 23rd, and passed on to Nova Scotia and Cape Breton on the 24th, doing extreme damage both at sea and on land," by Capt. H. Toynbee (with a plate); "On a Mercurial Barometer for the use of Travellers, filled by the spiral cord method," by Staff-Commander C. George, R.N.; also an account of the discussion on the best form of Thermometer Stand, which took place at the meeting of November 19, 1873.

Archives des Sciences Physiques et Naturelles, Jan. 15, 1874.—The principal article in this number is an exhaustive study, by Prof. Forel, of the *seiches*, or peculiar tidal phenomena, which have long been observed on the lake of Geneva. The subject is treated in five sections, as follows: the seiches at Geneva and at Morges compared; oscillatory movement in the harbour at Morges, analogous to seiches; the movement of oscillation of seiches; experimental study (with special apparatus) of the laws of oscillation of libration; and lastly, comparisons and conclusions. Prof. Forel adheres to the theory generally accepted in explanation of the phenomenon, viz., that it is due to variations of atmospheric pressure; the pressure diminishing at one part and increasing at another, the surface of the water rises in the former case and sinks in the latter. Thus a swinging undulation is produced. Some of the larger seiches are attributed to earthquakes. The amplitude differs in different seiches; and in the same seiche it varies from one point of the lake to another. The duration of different seiches also varies in the same locality; and the duration of seiches is longer at Geneva than at Morges. These and other effects the author seeks to explain, harmonising them with physical phenomena studied in his apparatus.—In a note on the surface of waves, by M. Charles Cellerier, it is sought to show that there is no real disagreement between the laws of double refraction, as furnished by observation, and the theory based on molecular movements. It is probable, he thinks, that the ordinary ray, whether in uniaxial crystals, or in principal sections of crystals with two axes, has not quite the direction generally assigned to it; though the deviation, without disagreeing with theory, may be so small as to escape observation.—In the department of zoology, we may notice a review of recent researches by Haeckel, Bütschli, and others, on Infusoria.

Memorie della Soc. degli Spectroscopisti Italiani, September, 1873.—Prof. Tacchini contributes a paper on his observations on the magnesium lines and 1,474 line seen bright on the sun's limb, from which it appears that the 1,474 line is always visible in a magnesium region; and further, that it frequently appears by itself where no magnesium is seen. Two beautifully-executed chromolithographs of the chromosphere on the 15th and 16th of July last accompany the paper, showing the relative intensities of the magnesium and 1,474 lines, together with their positions. The intensity of the magnesium lines seems the greater of the two, though not covering so extensive a region.—Father Secchi gives a note on the spectrum of iron, and other metals, obtained by volatilisation with fifty Bunsen's cells. He appears to find that the 1,474 line is not due to iron, and that different kinds of iron give slightly different spectra. He also gives a drawing of the carbon spectrum from the electric light, which appears similar to that of cyanogen, with the addition of five equidistant bands in the yellow and red.—The tables of Mr. E. Loomis, containing the maximum years of sun-spots, the maximum years of magnetic declination, and the maximum years of auroral display from 1778 to 1870, are given, from which, at a glance, it is seen that the maxima of all three occur in the same years with very small exceptions, and the years of minima correspond even better.

Justus Liebig's Annalen der Chemie u. Pharmacie, Band 170, Heft 3. This number contains the following papers:—"Communications from the Chemical Laboratory of the Polytechnic School at Delft: iv. Researches upon Podocarpic Acid," by A. C. Oudemans, jun. This acid is obtained from the resin of *Podocarpus cupressina var. imbricata* Blume.; a tree growing in Java. The formula assigned to the acid is $C_6H_2\left\{\begin{matrix}OH\\COOH\\CH_3\\C_9H_{15}\end{matrix}\right.$ $= C_{17}H_{22}O_3$. Some of the salts are described, and also the mono- and di-nitro substitution products. A sulpho-acid, amidated, and brominated derivatives have been obtained, likewise an acetyl derivative. The author has studied exhaustively the decomposition products of the new acid, and these have led him to the constitutional formula above given.—Upon Cymene, by F. Beilstein u. A. Kupffer. The authors have examined cymenes from cumin-oil and from camphor, and find them to be identical. The same authors contribute a paper on oil of wormwood. This oil yields by distillation a terpene, absinthol ($C_{10}H_{16}O$), and a deep blue oil.—"Crystallographic researches on the calcium salts of cymene-hyphersulphonic acid," by M. Jerofejew.—"Cumic acid," by F. Beilstein u. A. Kupffer. The authors obtain the potassium salt of this acid by acting on cumin-oil with fused potash.—A lengthy paper on the salts of ethylaldehyde-sulphurous acid and the action of the sodium-sulphites upon ethylidene chloride, by Hans Bunte.—On the formula of silicates, by Prof. V. Wartha.—The concluding paper is by Otto Sigel, on the constituents of arnica water and of the essential oil of arnica.

SOCIETIES AND ACADEMIES

LONDON

Linnean Society, March 5.—Special General Meeting, G. Busk F.R.S., vice-president, in the chair. After the chairman had, in a short conciliatory address, stated the reasons which had induced the Council to summon the present meeting, he called on Mr. W. Carruthers, F.R.S., who moved "That a Committee be appointed to consider the Bye-laws and to suggest to the Council such alterations, omissions, or additions as they may think desirable." The motion having been seconded by Mr. W. S. Dallas, Major-General Strachey, F.R.S., moved as an amendment, which was seconded by Mr. C. J. Breese, "That, inasmuch as it appears that there are differences of opinion in the Society as to the legality of the alterations of the Bye-laws made at the meeting of January 15 last:—(1) This meeting, retaining complete confidence in the President and Council of the Society, requests them to obtain the opinion of some legal authority, whether these alterations are legally binding on the Society or not; (2) That if the opinion be that the said alterations are legally binding, no further steps be taken in reference to them; (3) That if the opinion be that the said alterations, or any of them, are not legally binding, the Council be requested to take the necessary proceedings for setting aside the vote of January 15."—A second amendment was moved by Mr. J. E. Harting;—"That the case having been already submitted to Council, the opinion thereon be read for the information of the meeting." After much discussion, in which Sir John Lubbock, Dr. Thos. Thomson, Dr. Trimen, Prof. Thiselton-Dyer, Mr. H. G. Seeley, and others took part, Mr. Harting's amendment was withdrawn, and the vote taken on Major-General Strachey's amendment, which was carried, and was afterwards adopted as a substantive resolution.—Sir John Lubbock, Bart, F.R.S. then moved and Mr. W. Carruthers, F.R.S. seconded a resolution expressive of the high sense entertained by the meeting of the eminent services both to the Society and to Science rendered by the President during his long tenure of the chair, which was carried unanimously by acclamation; and the meeting closed with a vote of thanks to the chairman.

Zoological Society, March 3.—Dr. E. Hamilton, vice-president, in the chair.—The Secretary read a report on the additions that had been made to the Society's Menagerie during the month of February, 1874, and called especial attention to a Malayan Hornbill (*Buceros malayanus*) new to the Society's collection, acquired by purchase; a Python, presented by Mr. C. J. Noble, of Hong Kong, having been captured in his garden on the Chinese mainland; and a young male of an undescribed species of Deer from Northern China.—A letter was read from Sir Henry Barkly, K.C.B., Governor of the Cape Colony, announcing that he had obtained a pair of young Eared Seals (*Otaria pusilla*) for the Society's collection.—A communication was read from Mr. W. H. Hudson, of Buenos Ayres, describing the parasitical habits of the three species of *Molothrus* found in Buenos Ayres, namely, *M. bonariensis*, *M. badius*, and *M. rufo-axillaris*.—Mr. Sclater read an account of a small collection of Birds obtained by Sir Graham Briggs in the island of Barbados, West Indies.—A second paper by Mr. Sclater contained the description of an apparently new form of the family *Icteridæ*, which he proposed to call *Centropsar mirus*.—A communication was read from Dr. J. E. Gray, F.R.S., containing some remarks on *Crocodilus johnsonii* Krefft, from Northern Australia, of which he proposed to form a new genus, *Phylas*.—Mr. W. Saville Kent, F.L.S., read a paper on a huge Cephalopod or Cuttle Fish, announced by the Rev. M. Harvey as lately encountered in Conception Bay, Newfoundland, and of which a tentacle 16 feet long has been secured for the St. John's Museum (NATURE, vol. ix. p. 332). Mr. Saville Kent contributed the additional evidence of an arm 9 feet long preserved in the British Museum, in proof of the gigantic dimensions occasionally attained by certain members of this order of the Mollusca, and proposed to institute the new generic title of *Megaloteuthis* for their especial reception; he further suggested distinguishing the Newfoundland example as *Megaloteuthis harveyi*, in recognition of the service to science rendered by Mr. Harvey, in his record of and steps taken to preserve so valuable a trophy.

Geological Society, Feb. 25.—John Evans, F.R.S., president, in the chair. The following communications were read:—Geological Notes on a Journey from Algiers to the Sahara, by George Maw. The author commences by describing the details observed on his journey from Algiers to L'Aghouat, on the borders of the Sahara. The distance traversed was 285 miles, or about 210 miles in a straight line, and in a direction nearly north and south. No eruptive rocks were observed. The oldest rock is a boss of mica-schist and gneiss behind the city of Algiers; it forms a low anticlinal, with a north and south strike. The pass through the gorge of the Chiffa in the Lesser Atlas shows hard slaty rocks dipping south at a high angle; they are repeated as an anticlinal on the south side of the higher part of the Tell plateau, and are probably Mesozoic. In the plain separating the Tell from the Hauts Plateaux, and on the south side of the latter, red and yellow sandstones form anticlinals; these rocks resemble the Bunter in mineral characters, and are overlain by red marls resembling the Keuper. In the northern escarpment of the Hauts Plateaux saliferous marls are exposed, interstratified between the sandstones and below the red and grey marls. Crystals of salt and gypsum are intimately mixed with the grey marls, and the so-called "Rochers de Sel" are capped with great blocks of rock tumbled about in confusion, the position of which the author ascribes to the failure of support due to the solution of the salt in the underlying salt-marls. A thin series of bright red and green marls is seen to overlie the red sandstones in several places; and above this is an immense series of dark grey marls, interstratified with argillaceo-calcareous bands, forming a great synclinal of the Hauts Plateaux, and a contorted mass on the Tell plateau. These are probably cretaceous. At L'Aghouat they are overlain by fossiliferous beds, probably of Miocene age. Other Tertiary beds observed are soft yellow calcareous freestones on the flanks of the promontory of Algiers and of the Lesser Atlas, and some red and grey marls and ferruginous freestone capping the Tell plateau, the former at a height of 100–900 feet, and the latter of 2,500–4,000 feet above the sea-level. The plain of the Mitidja, between the Lesser Atlas and Algiers, consists of grey loam with shingle-beds, of post-tertiary age. A similar loam covers the great plain of the northern Sahara, and rises to a height of 2,700 feet. Raised beaches occur on the coast up to an elevation of 600 feet above the sea-level; and similar beaches are found inland, south of the Tell plateau, at a height of 2,000 feet. The oldest land in the line of section is the anticlinal of mica-schist near Algiers, the strike of which is nearly at right angles to that of the other rocks. The upheaval of the Mesozoic rocks was contemporaneous with the first upheaval of the Lesser Atlas; it was followed by a long period of denudation, and this by a subsidence of at least 3,000 feet in Tertiary times, during which the Miocene deposits were formed. The Tell plateau was thus elevated at least 4,000 feet, and the district north of the Lesser Atlas at least 1,000 feet, the north face of those mountains probably marking a post-tertiary line of fault of 3,000 feet. This operation was followed by a long period of denudation, and this by a post-tertiary depression, which the author terms the "Sahara Submergence," after which the land was re-elevated at least 3,000 feet, but perhaps considerably more. A gradual subsidence appears to be still taking place.—On the Trimerellidæ, a Palæozoic family of the Palliobranchs or Brachiopoda, by Thomas Davidson, F.R.S., and Prof. William King. In this memoir the authors describe in detail certain Brachiopoda, for which they propose to establish a distinct family, discuss the characters and affinities of the family, and indicate certain geological considerations which arise from their study of its numbers.—Note on the occurrence of sapphires and rubies *in situ* with Corundum, at the Culsagee Corundum Mines, Macon Co., North Carolina, by Col. C. W. Jenks. Communicated by David Forbes, F.R.S.

Chemical Society, March 5.—G. C. Foster in the chair.—A paper on the spontaneous combustion of charcoal, by Mr. A. F. Hargreaves, in which he pointed out the best wood for charcoal for the manufacture of gunpowder, and also the best method of charring it. It appears that if it is ground too soon after being burnt the charcoal is liable to take fire spontaneously.—The other communications were—Researches on the action of the copper-zinc couple on organic bodies: Part V. On the bromides of the olefines: Part VI. On ethyl bromide, by Dr. J. H. Gladstone and Mr. A. Tribe.—Researches on the preparation of organo-metallic bodies of the C_nH_{2n} series of hydrocarbons, by Dr. D. Tommasi.—Note on the action of trichloracetyl chloride on urea, by Messrs. R. Meldola and D. Tommasi; and the agglomeration of finely-divided metals by hydrogen, by Mr. A. Tribe.

Royal Microscopical Society, March 4.—Chas. Brooke, F.R.S., president, in the chair.—A paper was read by Mr. Alfred Sanders, entitled "A Contribution towards a Knowledge of the Appendicularia," in which he minutely described specimens found at Torquay and Weymouth, and illustrated the subject by diagrams. A short discussion ensued as to the best methods of observing and preserving these delicate organisms.—Two papers by Dr. Royston Pigott were afterwards read by the secretary, the first "On the Verification of Structure by means of Compressed Fluid," the second being entitled "A Note on the President's remarks on Dr. Pigott's Aplanatic Searcher."—Dr. Pigott subsequently gave an extended explanation of the contents of his papers, and also detailed a new method of determining the refractive index of covering glass.

Entomological Society, March 2.—Sir Sidney S. Saunders, president, in the chair.—Mr. M'Lachlan exhibited two male examples of an Orthopterous insect belonging to the family *Locustidæ*. They were said to be sold in the streets of Shanghai, confined in ornamental wicker cages, and bought for the sound they produced. The species appeared to be undescribed, and to pertain to a new genus allied to *Xiphidium*. Mr. M'Lachlan also exhibited a series of examples illustrating the natural history of *Oniscigaster wakefieldi*, from New Zealand, described and figured by him from the female imago in the *Entomologist's Magazine* for October 1873. The series now exhibited comprised the male imago, female sub-imago, adult nymph, and larva. The lateral wing-like horny expansions of the terminal segments of the abdomen in the imago and sub-imago are continued in the aquatic conditions on each segment of the abdomen, and in addition there are similar formations along the back of the abdomen, placed longitudinally and vertically. The adult nymph appears to possess no external gills or laminæ, but they are conspicuous in the less mature larva on each side of the ventral surface of the abdomen.—The Rev. A. E. Eaton exhibited some Arctic insects which he had brought from Spitzbergen; and also some excellent photographs illustrating the scenery of the country.—A further communication was received from Mr. Gooch respecting the injury to the coffee-trees in Natal from the Longicorn beetle, *Anthores leuconotus* Pascoe.—Papers were communicated, "On some new Species of South African *Lycænidæ*," by Mr. Roland Trimen, and "Descriptions of new Species of *Lycænidæ*," from his own collection, by Mr. W. C. Hewitson.

Society of Biblical Archæology, March 3.—Dr. Birch, F.S.A., president, in the chair.—The following papers were read:—Translation of an Egyptian fabulous romance, "The Tale of the Doomed Prince," from the Harris Papyri, by C. W. Goodwin. The translator drew attention to the peculiar features of this ancient story, resembling in so many points the romances of the mediæval period, which may have had a common origin.—Translation of an historical narrative belonging to the reign of Thothmes III., by C. W. Goodwin.—Observations upon the Assyrian verbs *Basu* and *Qabah*, by Prof. William Wright. This paper consisted of a critical analysis of the roots of the above verbs, and their cognate analogues in other Semitic languages.

Geologists' Association, Feb. 6.—Henry Woodward, F.R.S., president, in the chair.—On the probability of finding Coal in the Eastern Counties, by John Gunn, F.G.S. Mr. Gunn gave the preference to a boring on the south of Essex, and proceeded to state the grounds on which he recommended another boring at Hunstanton, or along the outcrop of the Kimmeridge clay, in Norfolk. He detailed the several papers which he had read at the meetings of the British Association at Nottingham, Brighton, and Bradford, in proof of the existence of a forest bed in Norfolk and Suffolk, which he called the Anglo-Belgian basin, or a succession of growth of forests, and of alternate elevations and depressions which have taken place in that region, and argued thence, by analogy, the extreme probability that such existed in the carboniferous epoch. Mr. Gunn represented that if the southerly dip of the Harwich slaty rocks extended in a northerly direction it must have been reached at the Norwich boring, which was sunk considerably lower than that at Harwich, and did not pierce through the gault. Mr. Gunn dwelt especially upon this as the most serious objection to the prospect of reaching coal at Hunstanton, or rather carboniferous beds, expressed so strongly by Prof. Hall at the Brit. Ass. meeting at Brighton. Mr. Gunn also referred to the evidence of local subterranean movements in proof of the proximity of disturbances acting upon what he regarded as a thin envelope of tertiary or secondary deposits probably not exceeding 1,000 feet, and perhaps much less. He referred to the evidence of boulders, which he hoped to adduce on a future occasion.—On the Geology of Nottingham, by the Rev. A. Irving, F.G.S. Part 1.

EDINBURGH

Geological Society, Feb. 26.—David Milne Home, F.G.S., vice-president, in the chair.—The following papers were read:—Notice of large striated boulder in Tynecastle Sandpit, a quarter of a mile west of Dalry Cemetery, Edinburgh, by D. Milne Home.—On glacial phenomena in the neighbourhood of Edinburgh—(1) the Pentland Hills; (2) Bruntsfield Links; (3) Blackford Hill; (4) Tynecastle—by D. J. Brown.—Notice of a section in the building excavations at Tynecastle, by Ralph Richardson.—On glacial phenomena in the Pentland Hills and neighbourhood of Edinburgh, by John Henderson.—Mr. Milne Home's paper, which was illustrated by diagrams, described the boulder as being well rounded on the sides, and its greatest length as 4½ ft., its greatest width 4 ft., its thickness about 2 ft. Its upper and under surfaces were distinctly grooved, and most deeply in the line of the longer axis, which lay N.E. by E. There were some fainter striæ oblique to that line. From a comparison of the striations, he concluded that the superior and lateral striæ had been made after the stone was laid in the bed where found. The stone, which was of greenstone, lay on a bed of compact muddy sand, containing stones which were mostly angular. Above the stone was a considerable deposit of sand, and over that a series of gravels with clayey and sandy beds, all stratified, above which was the soil—the whole deposit being a bank from 20 to 30 ft. thick. This great bed of sand and gravel, in the upper part and west side of which the boulder was found, had been originally a submarine bank. Its height above the present sea-level was about 200 ft. How much above this level the sea stood when this bank was formed was, of course, only matter of conjecture. The nearest rocks similar to the boulders were situated to the westward; most probably, therefore, it had been rafted on ice from that quarter; and, by reason of the ice stranding on this sandbank, the boulder had been deposited there. The deep striæ on the under side showed that the boulder after being deposited on the sea bottom, had been pushed forward easterly. After it had stuck fast it had been striated on the top and exposed sides, by hard and sharp rocks pushed over it, probably by icebergs. The under striæ evidently indicated that they were begun to be formed from the east side, whilst the upper striæ indicated that they had been begun to be formed by some agent passing over from the westward by the pressure of floating ice. Mr. Milne Home stated that a boulder had been recently found on Sir Thomas Hepburn's property in East Lothian which also bore evidence of having been at one time subject to the action of floating ice.

PARIS

Academy of Sciences, March 2.—M. Bertrand in the chair.—The following communications were read:—On the proper nature of the principle of correspondence, by M. Chasles.—On the descending motion of solar and terrestrial cyclones, and on the formation of their opaque envelopes, by M. Faye. This is a reply to a paper by Dr. Reye, and is a defence of the cyclone theory of sun-spots.—On the acid waters which rise in the volcanoes of the Cordilleras, by M. Boussingault. The author considers the simultaneous occurrence of chlorides and sulphates in the igneous rocks the cause of the formation of hydrochloric, sulphurous and sulphuric acids in volcanic emanations, thermal waters, &c.—Meteorology of the month of January 1874 at Tougourt, by M. Ch. Sainte-Claire Deville.—Observations on solar prominences during the last quarter of the year 1873. Results furnished by the employment of diffraction gratings instead of prisms in the spectroscopic observation of the prominences, by P. A. Secchi. The author has observed the coincidence of spots with eruptions on the sun's limb on eighty-nine occasions. Eight times only were spots seen without an eruption. A remarkable case is recorded of the outburst of an eruption during the course of an observation.—On the reduction of bilinear forms, by M. G. Jordan.—On the refraction of gases, by M. Mascart.—Organogenesis compared with androgenesis in its relations to natural affinities (*class Personatæ*), by M. Ad. Chatin.—New species of the genus Dipterocarpus, by M. J. Vesque. Twelve species are described, all from Borneo.—Gnomonic projection of the terrestrial surface upon an octohedron and upon a cube circumscribing the sphere, by M. J. Thoulet.—On a new symptom of death derived from the pneumatosis of the veins of the retina, by M. E. Bouchut.—Geometrical demonstration of some theorems, by means of the consideration of an infinitely small rotation, by M. A. Mannheim.—Apparent orbit and period of revolution of the double star η Coronæ, by M. G. Flammarion.—On the mode of production of certain induction currents, by M. A. Gaiffe.—On the influence of albuminous substances upon electro-capillary phenomena, by M. Onimus.—New researches upon the physiological decomposition of beer-yeast, and remarks on a recent communication by M. Schutzenberger, by M. A. Béchamp.—On the action of chloral upon albumen, by M. H. Byasson.—Of the anæsthesia produced in man by the injection of chloral into the veins, by M. Oré.

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